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Laryngeal Chondrosarcoma: A Case Report

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Abstract

Introduction: Laryngeal chondrosarcoma is a rare tumor. It mainly develops in cricoid cartilage, surgery is the treatment of choice. His prognosis is good.

Case Report: A 55 year old man, non-smoking, was diagnosed with grade 2 laryngeal chondrosarcoma. Surgical treatment consisted of a total laryngectomy with bilateral neck dissection. Radiation therapy on the tumor bed was performed at a dose of 66 Gy in 33 fractions of 2 Gy once daily for 7 weeks. The follow-up of this patient is 12 months and his ECOG is 0.

Discussion: Laryngeal chondrosarcoma is a rare tumor, It mainly develops in cricoid cartilage. It produces dyspnea, dysphagia, odynophagia, hoarseness, and airway obstruction. CT scan is the method of choice for studying the larynx. Endoscopy enables biopsy, which should be profound as the tumor develops at the submucosal. Histopathological examination showed immature chondrocytes with variable cytonuclear abnormalities. There are three grades of severity: Grade 1, 2, 3 of laryngeal chondrosarcomas. Surgery is the treatment of choice. Chondrosarcoma is considered poorly sensitive to radiation therapy. Chemotherapy has no role in this indication. Prognosis depends upon histologic grade and quality of exeresis.

Conclusion: Laryngeal chondrosarcoma is a rare tumor, with slow growth and insidious clinical picture; Surgery is the treatment of choice, prognosis is generally good, and basically dependent on histologic grade.

Keywords: Laryngeal cancer; Chondrosarcoma

Introduction

Laryngeal chondrosarcoma is a rare tumor (1% of cartilaginous tumors, 2% of laryngeal tumors). It mainly develops in cricoid cartilage (75% of cases), never develops in elastic cartilage as the epiglottis. Imaging specifies the location, nature and extension of the lesion. Surgery is the treatment of choice. Prognosis is good.

Case report

- A 55 year old man, non-smoking.
- The patient presented dysphonia, followed by laryngeal dyspnea, requiring emergency tracheotomy.
- CT scan of the neck showed a calcified glotto subglottic mass. This mass infiltrates the left vocal cord and extends to the posterior commissure. It infiltrates the paraglottic fat and lysis cricoid cartilage with extension to the retrolaryngeal space, and invades the thyroid cartilage. Absence of lymphadenopathy (Figure 1).
- Biopsy analysis was performed on jully 2013. It indicated grade 2 chondrosarcoma.

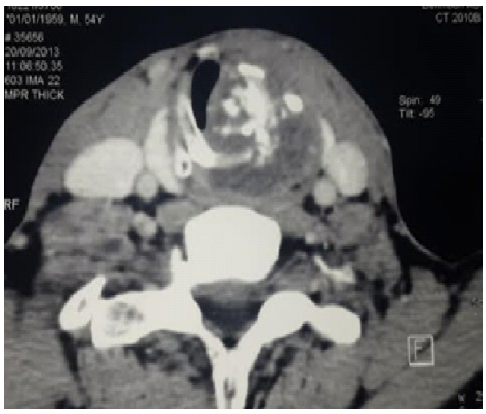

Figure 1: Axial CT slice: calcification in left glotto subglottic lesion.

- Surgical treatment consisted of a total laryngectomy with bilateral neck dissection. Postoperative course was without complications.
- Pathology findings indicated complete removal of a grade-2 chondrosarcoma (Figures 2a and 2b).
- Radiation therapy on the tumor bed was performed at a dose of 66 Gy in 33 fractions of 2 Gy once daily for 7 weeks (Figure 3).
- Delay surgery radiotherapy was 8 weeks.
- Treatment was well tolerated.
- Follow-up of this patient is planned for every 3 months for 2 years, every 6 months for 3 years, and annually for life. The follow-up of this patient is 12 months and his ECOG is 0.

Discussion

Laryngeal chondrosarcoma is a rare tumor; it represents less than 1 % of sarcomas [1]. It mainly develops in cricoid cartilage [75% of cases] [2-4], rarely in thyroid cartilage (20% of cases) or arytenoid cartilage (3% of cases) [3,5,6]. It generally occurs in patients aged between 50 and 70 years, with male predominance [2,6,7]. Laryngeal chondrosarcoma produces dyspnea, dysphagia, odynophagia, hoarseness, and airway obstruction [5,8]. CT scan is the method of choice for studying the larynx. A variably dense, expansile lesion with characteristic "popcorn" calcifications is usually present [5,9,10]. Adjacent soft tissue or bone can

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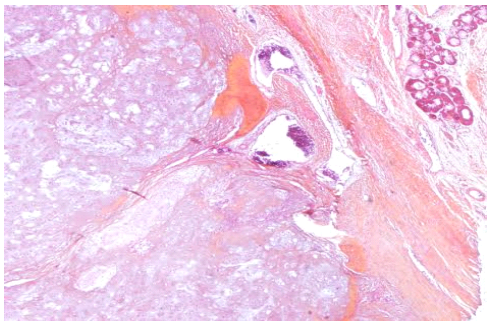
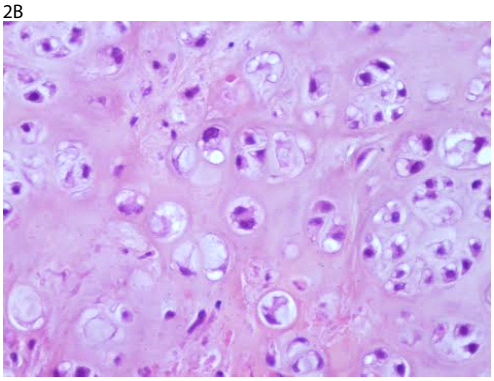
2A



2B



Figures 2A and 2B: Features of the tumor on histological examination (hematoxylin and eosin staining). The tumor has a lobular growth pattern (A). The neoplastic cells have frankly malignant cytomorphology with nuclear atypia and frequent binucleated cells, distributed in the cartilaginous matrix (B).

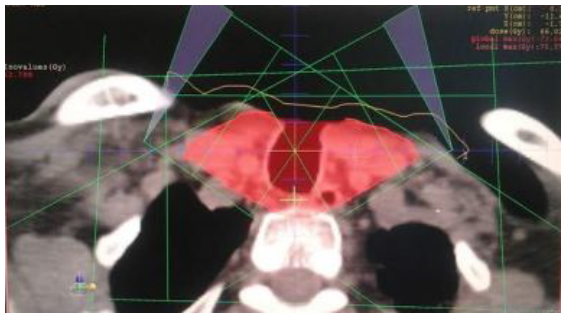


Figure 3: Radiotherapy plan.

be invaded [5,8,9]. A benign chondroma cannot be differentiated from a chondrosarcoma by imaging, only histology can make the difference [5]. Endoscopy enables biopsy, which should be profound as the tumor develops at the submucosal. Histopathological examination showed immature chondrocytes with variable cytonuclear abnormalities [6,11]. There are three grades of severity: Grade 1, 2, 3 it represents 40%, 49%, 5% of laryngeal chondrosarcomas respectively [5]. Chondromas are overall hypocellular, with small mononucleated chondrocytes and show no necrosis hyperchromasia, or mitotic activity [5,8,10,12].

Grade 1 chondrosarcomas are characterized by the presence of bi- or multinucleated chondrocytes lacking mitotic activity with areas of calcification, it has the best prognosis,but difficult to differentiate from chondroma [2,6] and metastatic potential is rare. Grade 2 chondrosarcomas show increased cellularity with rare mitotic forms and the metastatic potential represents only 10% [6]. Grade 3 chondrosarcomas, are hypercellular with multinucleated chondrocytes and increased mitotic activity [5]; While there has been documentation of 71% of high-grade laryngeal chondroasarcomas showing metastases. [5,13] Surgery is the treatment of choice [2,5]. Grade 2 and 3 chondrosarcomas may be treated by partial surgery with adequate safety margins. Chondrosarcoma is considered poorly sensitive to radiation therapy. It may be considered where surgery is contraindicated, or postoperatively in case of incomplete exeresis [2,5,6]. Chemotherapy has no role in this indication [7]. Prognosis depends upon histologic grade and quality of exeresis. Overall five-year survivorship ranges from 79% to 90% [11,14]. Metastasis or recurrence is rare when the surgery is complete, it occurs in 8% to 14% of cases [1,2,11].

Conclusion

Laryngeal chondrosarcoma is a rare tumor, with slow growth and insidious clinical picture; Surgery is the treatment of choice, Prognosis is generally good, and basically dependent on histologic grade.

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